

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

_____	)	
TRUSTEES OF BOSTON UNIVERSITY,	)	
Plaintiff,	)	
	)	Consolidated Civil Action No.
v.	)	12-11935-PBS
	)	
EVERLIGHT ELECTRONICS CO., LTD.,	)	
et al.,	)	
Defendants.	)	
_____	)	
TRUSTEES OF BOSTON UNIVERSITY,	)	
Plaintiff,	)	
	)	Civil Action No. 12-12326-PBS
v.	)	
	)	
EPISTAR CORPORATION, et al.,	)	
Defendants.	)	
_____	)	
TRUSTEES OF BOSTON UNIVERSITY,	)	
Plaintiff,	)	
	)	Civil Action No. 12-12330-PBS
v.	)	
	)	
LITE-ON INC., et al.,	)	
Defendants.	)	
_____	)	

**MEMORANDUM AND ORDER**

October 23, 2015

Saris, C.J.

Plaintiff Trustees of Boston University (BU) has filed suit against Defendants Epistar Corporation, Everlight Electronics Co., Ltd., and Lite-On, Inc., alleging infringement of U.S. Patent No. 5,686,738. Before the Court is defendants' Daubert motion in limine to exclude certain opinions and testimony of

BU's damages expert, Alan Ratliff, related to his reasonable royalty base calculation (Docket No. 1415). The defendants argue that Mr. Ratliff makes four critical errors in his expert report on damages that render his opinion on the reasonable royalty base unreliable under Federal Rules of Evidence 702 and 703, and Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993). The defendants specifically allege that Mr. Ratliff (1) uses the wrong royalty base for Epistar's alleged induced infringement; (2) fails to apportion the royalty base for Everlight and Lite-On to include only revenue attributable to the patented feature; (3) incorrectly includes pre-notice direct sales by Everlight and Lite-On in the royalty base for Epistar's inducement liability; and (4) includes design-win sales in Everlight's and Lite-On's royalty bases that did not involve a commission paid to a U.S. sales agent in contravention of the design-win theory.

After review of the damages expert reports, the parties' submissions, and the applicable law, I **DENY** the motion with respect to the first three theories. The Court will not reach the defendants' fourth argument on the errors in Mr. Ratliff's reasonable royalty base related to the design-win theory at this time because the Court has deferred resolution of the design win issues in this case. See Docket No. 1476. I will address the other three arguments in turn.

**I. Using Everlight and Lite-On LED Package Sales Revenue as the Royalty Base for All Defendants**

*A. The Hypothetical Negotiation Approach*

Under 35 U.S.C. § 284, upon finding for the claimant in a patent infringement case, "the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court." 35 U.S.C. § 284. The patentee bears the burden of proving damages. Lucent Techs., Inc. v. Gateway, Inc., 580 F.3d 1301, 1324 (Fed. Cir. 2009). "To properly carry this burden, the patentee must sufficiently tie the expert testimony on damages to the facts of the case." Uniloc, USA, Inc. v. Microsoft Corp., 632 F.3d 1292, 1315 (Fed. Cir. 2011) (internal quotation marks and citations omitted).

There are several approaches for calculating a reasonable royalty. Id. Here, the parties have all adopted the most common method, the hypothetical negotiation approach, which "attempts to ascertain the royalty upon which the parties would have agreed had they successfully negotiated an agreement just before infringement began." Virnetx, Inc. v. Cisco Sys., Inc., 767 F.3d 1308, 1326 (Fed. Cir. 2014); Lucent, 580 F.3d at 1324-25. "The hypothetical negotiation tries, as best as possible, to recreate the *ex ante* licensing negotiation scenario and to describe the

resulting agreement." Lucent, 580 F.3d at 1325. This analysis "necessarily involves an element of approximation and uncertainty." Id. "A reasonable royalty may be a lump-sum payment not calculated on a per unit basis, but it may also be, and often is, a running payment that varies with the number of infringing units." Virnetx, 767 F.3d at 1326. If a running royalty payment is selected, "it generally has two prongs: a royalty base and a royalty rate." Id.

BU seeks to call Mr. Ratliff as an expert witness to testify at trial regarding the most likely form of a hypothetical license agreement between BU and the defendants. Federal Rule of Evidence 702, which codified the Supreme Court's holding in Daubert, governs the admissibility of expert evidence. Under Daubert and Rule 702, district courts "are charged with a 'gatekeeping role,' the objective of which is to ensure that expert testimony admitted into evidence is both reliable and relevant." Sundance, Inc. v. DeMonte Fabricating Ltd., 550 F.3d 1356, 1360 (Fed. Cir. 2008) (quoting Daubert, 509 U.S. at 597); see also Uniloc, 632 F.3d at 1315. "While questions regarding which facts are most relevant for calculating a reasonable royalty are properly left to the jury, a critical prerequisite is that the underlying methodology be sound." Virnetx, 767 F.3d at 1328.

*B. Apportionment and the Entire Market Value Rule*

The Federal Circuit has repeatedly emphasized that when "small elements of multi-component products are accused of infringement, calculating a royalty on the entire product carries a considerable risk that the patentee will be improperly compensated for non-infringing components of that product." LaserDynamics, Inc. v. Quanta Computer, Inc., 694 F.3d 51, 66-67 (Fed. Cir. 2012); see also Virnetx, 767 F.3d at 1326 (collecting cases). As a result, courts generally require "that royalties be based not on the entire product, but instead on the 'smallest salable patent-practicing unit.'" LaserDynamics, 694 F.3d at 67 (quoting Cornell Univ. v. Hewlett-Packard Co., 609 F. Supp. 2d 279, 283, 287-88 (N.D.N.Y. 2009)). "The entire market value rule is a narrow exception to this general rule." Id. Under the entire market value rule, if the patentee can prove "that the patented feature drives demand for an entire multi-component product, a patentee may be awarded damages as a percentage of revenues or profits attributable to the entire product." Id.

If a patentee cannot show that "the patented feature creates the basis for customer demand or substantially creates the value of the component parts," then "principles of apportionment apply." Virnetx, 767 F.3d at 1326. The entire market value rule originates in Supreme Court precedent requiring that the patentee "must in every case give evidence tending to separate or apportion the defendant's profits and the

patentee's damages between the patented feature and the unpatented features, and such evidence must be reliable and tangible, and not conjectural or speculative." Garretson v. Clark, 111 U.S. 120, 121 (1884); Virnetx, 767 F.3d at 1326; LaserDynamics, 694 F.3d at 67. The Federal Circuit has "cautioned against reliance on the entire market value of the accused products because it cannot help but skew the damages horizon for the jury, regardless of the contribution of the patented component to this revenue." Virnetx, 767 F.3d at 1327 (internal quotation marks and citations omitted). Thus, the district court must exercise "its gatekeeping authority to ensure that only theories comporting with settled principles of apportionment [are] allowed to reach the jury." Id. at 1328.

*C. Royalty Base for Epistar's Induced Infringement and Everlight and Lite-On's Direct Infringement*

The parties dispute the applicability of the entire market value rule to this case. Mr. Ratliff uses the sales revenue from Everlight's and Lite-On's LED packages (sometimes called "end products") to calculate the royalty base. The dispute here focuses on whether Mr. Ratliff should instead be using just Epistar's LED chip sales revenue. In other filings, the defendants also allege that Mr. Ratliff includes sales revenue from Everlight and Lite-On products that are not accused and do

not include GaN LED chips in his royalty base. See Docket No. 1456. The Court does not address these other arguments here.

In this motion, the defendants argue that Mr. Ratliff errs in using the sales revenue from Everlight's and Lite-On's end products as the royalty base for Epistar's indirect infringement, and as the royalty base for Everlight's and Lite-On's direct infringement, because BU has not satisfied its burden of showing that the patented technology drives demand for the accused LED packages.<sup>1</sup> Epistar sells allegedly infringing GaN LED chips to Everlight and Lite-On for \$0.01 per chip. Everlight and Lite-On then incorporate these chips into various LED packages that sell for \$0.05 each.

BU makes three arguments in support of Mr. Ratliff's use of Everlight's and Lite-On's LED package sales revenue—as opposed to Epistar's LED chips sales revenue—as the royalty base for Epistar's indirect infringement and Everlight and Lite-On's direct infringement. First, BU argues that the defendants failed to produce any evidence on how many chips come in the various

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<sup>1</sup>BU advances two theories of infringement against Epistar: (1) direct infringement for Epistar's chip sales to the U.S. company Bridgelux and (2) indirect infringement for Epistar's chip sales to its Taiwanese customers Everlight and Lite-On, who subsequently sell LED packages into the United States. The parties agree that Mr. Ratliff correctly uses the value of Epistar's GaN LED chip sales to Bridgelux to calculate Epistar's royalty base for direct infringement. However, there is a dispute as to whether the Bridgelux sales are U.S. sales at all, which will be resolved by the jury.

packages Everlight and Lite-On sell and on Epistar's sales price until after Mr. Ratliff submitted his expert report, and that the defendants should not be allowed to benefit from this failure. The Court is unable to determine from the record whether this chip and sales data was available to BU through the SAP database system, which BU's counsel and experts had access to in July and August 2015 when Mr. Ratliff was drafting his report. The Court has already ordered the parties to meet and confer to resolve this dispute as to what data was available in the SAP system, see Docket No. 1482, and thus declines to address this argument. If there continues to be disagreement, the Court will resolve the matter at a hearing during the trial.

Next, BU argues that the entire market value rule should not apply in analyzing the royalty base for the defendants' infringement because, even though the LED chip is the smallest salable unit,<sup>2</sup> "customary licensing is on the whole product—the module or package, which includes the chip." Docket No. 1450 at 3. BU relies on the Federal Circuit's decision in Lucent Technologies, Inc. v. Gateway, Inc. to support this point. Lucent Technologies explained that "the base used in a running royalty calculation can always be the value of the entire

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<sup>2</sup> BU admits that the chip is the smallest salable unit with respect to Epistar, but argues that the LED package is the smallest salable unit for Everlight and Lite-On because they do not sell chips.



commercial embodiment, as long as the magnitude of the rate is within an acceptable range," and that "sophisticated parties routinely enter into license agreements that base the value of patented inventions as a percentage of the commercial products' sales price." Lucent, 580 F.3d at 1338-39.

In later cases the Federal Circuit has clarified that Lucent Technologies did not create an exception to the entire market value rule where customary licensing agreements are based on the commercial products' sales price or a low royalty rate is used. See, e.g., Virnetx, 767 F.3d at 1329 ("The law requires patentees to apportion the royalty down to a reasonable estimate of the value of its claimed technology, or else establish that its patented technology drove demand for the entire product."); LaserDynamics, 694 F.3d at 68 ("We reaffirm that in any case involving multi-component products, patentees may not calculate damages based on sales of the entire product, as opposed to the smallest salable patent-practicing unit, without showing that the demand for the entire product is attributable to the patented feature."); Uniloc, 632 F.3d at 1320 ("The Supreme Court and this court's precedents do not allow consideration of the entire market value of accused products for minor patent improvements simply by asserting a low enough royalty rate.").

Thus, the entire market value rule does apply to this case.<sup>3</sup> BU cannot base its reasonable royalty for the defendants' alleged infringement on the sales revenue from Everlight's and Lite-On's end products without first proving that the patented feature in this case—the GaN thin film included in Epistar's LED chips and Everlight's and Lite-On's LED packages—drives demand for these multi-component products.

Finally, BU argues that the patented invention in this case is the basis of demand for the defendants' products. The Federal Circuit has made clear that in order to support an entire market value theory the patentee must show that the patented technology "is what motivates consumers" to buy the multi-component product used as the royalty base. LaserDynamics, 694 F.3d at 68.

Here, BU's infringement expert, Dr. Piner, has stated: "Dr. Moustakas' invention enabled commercially viable GaN LEDs to begin being produced. The invention was no less than the fundamental foundation on which highly efficient and, hence, cost effective bright-light LEDs were and are built upon." Docket No. 1412, Ex. A, 17. Dr. Piner further stated that "the

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<sup>3</sup> BU also cites to an unreported case from the Eastern District of Texas for the proposition that the entire market value rule does not apply where comparable licenses are based on a percentage of the sales price of the total accused product: Mondis Tech., Ltd. v. LG Elecs., Inc., No. 2:07-CV-565-TJW-CE, 2011 WL 2417367 (E.D. Tex. June 14, 2011). However, that case was also decided before LaserDynamics, which made clear that there is no such exception to the entire market value rule.

fundamental basis for the commercial demand of GaN LEDs, namely color and brightness, are the inherent features of the LED chips that are enabled by the '738 patent." Id. at 24. According to BU, the defendants' "own corporate representatives specifically cited color, brightness, efficiency, and durability as features of their LEDs that they market, not packaging." Docket No. 1450, at 5. The Court understands an LED package to be an "assembly that contains the LED chip and a set of electrical inputs that supply current to the chip." Docket No. 1377, Ex. M, 6. A review of the declarations BU cites to support the argument that the defendants' focus on the LED's color and brightness in their marketing indicates that the defendants' corporate representatives also emphasize their companies' "longevity" and willingness "to invest in capital for new product" in marketing materials. Docket No. 1450, Ex. C.

The mere fact that Dr. Moustakas may have had a groundbreaking invention is relevant, but not dispositive of the claimed invention's footprint in the market place. The Federal Circuit has suggested that "market studies or consumer surveys" would be particularly useful in determining whether a patented feature drives demand for a multi-component product. See LaserDynamics, 694 F.3d at 69 (emphasizing that the damages expert in the case "never conducted any market studies or consumer surveys to ascertain whether the demand for a laptop

computer [used as the royalty base] is driven by the patented technology"). There is no such study or survey in the record, and the Court has only a basic understanding of other components of the product. As such, the Court currently has an insufficient basis for determining whether the entire market value theory applies. Until I can make this determination, BU shall not mention damage figures based on the overall sales revenue from Everlight's and Lite-On's LED packages to the jury during opening statements. The Court will determine whether BU has presented sufficient evidence that the patented technology is what motivates consumers to buy the LED packages before the damages expert is allowed to testify as to this figure. See id. at 68. BU shall be prepared to have apportionment figures for the jury.

## **II. Including Pre-Notice Everlight and Lite-On Sales in Epistar's Induced Infringement Royalty Base**

The defendants also contend that Mr. Ratliff's opinion is unreliable because he includes Everlight and Lite-On sales for which Everlight and Lite-On have no direct infringement liability in Epistar's induced infringement royalty base. These sales allegedly took place after Epistar had notice of infringement, but before Everlight and Lite-On did. Under 35 U.S.C. § 287, if the patentee fails to mark the patented article, "no damages shall be recovered by the patentee in any

action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter, in which event damages may be recovered only for infringement occurring after such notice." 35 U.S.C. § 287(a). Under this provision, BU concedes that Everlight and Lite-On cannot be held liable for damages for direct infringement during the period of time after Epistar had notice, but before Everlight and Lite-On did.

However, the defendants go further to argue that Epistar cannot be held liable for damages for induced infringement during this time period because there can be no liability for indirect infringement without an underlying act of direct infringement. See Aro Mfg. Co., Inc. v. Convertible Top Replacement Co., Inc., 365 U.S. 336, 341 (1961). The defendants cite to Fonar Corp. v. General Electric Co., 107 F.3d 1543 (Fed. Cir. 1997) and Leapfrog Enterprise, Inc. v. Fisher-Price, Inc., No. Civ.A 03-927-GMS, 2005 WL 1331216 (D. Del. June 6, 2005) to support this argument. Neither case is applicable here, though, because in both the alleged inducer did not have notice of infringement at the time of the first sale to the induced infringer. See Fonar, 107 F.3d at 1554-55; Leapfrog, 2005 WL 1331216, at \*3.

The Leapfrog court emphasized that the "plain language" of 35 U.S.C. § 271 makes "inducing infringement . . . itself an act

of infringement." Leapfrog, 2005 WL 1331216, at \*4; see also 35 U.S.C. § 271(b) ("Whoever actively induces infringement of a patent shall be liable as an infringer."). "Consequently, such an act, if committed after notice, should give rise to damages under the marking statute's 'and continued to infringe thereafter' language." Id. (quoting 35 U.S.C. § 287(a)). Here, Epistar had notice when it sold the allegedly infringing LED chips to Everlight and Lite-On, and 35 U.S.C. § 287(a) does not bar BU from collecting damages for any acts of induced infringement that occurred after notice.

**ORDER**

The defendant's motion in limine to exclude certain opinions and testimony of BU's damages expert, Alan Ratliff, related to his reasonable royalty base calculation (Docket No. 1415) is **DENIED**.

/s/ PATTI B. SARIS

Patti B. Saris

Chief United States District Judge